

# **NOTIFICATION OF ADDENDUM**

## **ADDENDUM NO. 2**

**DATED 4/05/2007**

<b>Control</b>	<b>0447-05-055</b>
<b>Project</b>	<b>BR 2005(81)</b>
<b>Highway</b>	<b>FM 774</b>
<b>County</b>	<b>REFUGIO</b>

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an addendum notification which details the changes and the respective proposal pages which were added and/or changed.

Except for new bid insert pages, it is unnecessary to return any of the pages attached.

Bid insert pages must be returned with the bid proposal submitted to the Department, unless your firm is submitting a bid using a computer print out. The computer print out must be changed to reflect the new bid item information.

Contractors and material suppliers, etc. who have previously been furnished informational proposals are not being furnished a copy of the addendum. If you have a subcontractor on the above project, please advise them of this addendum. Acknowledgment of this addendum is not requested if your company has been issued a proposal stamped "This Proposal Issued for Informational Purposes."

You are required to acknowledge receipt of this addendum on the Addendum Acknowledgement form contained in your bid proposal by placing a mark in the box next to the respective addendum.

Failure to Acknowledge receipt of this addendum in your bid proposal will result in your bid not being read.

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: BR 2005(81)

CONTROL: 0447-05-055

COUNTY: REFUGIO

LETTING: 04/10/2007

REFERENCE NO: 0404

**PROPOSAL ADDENDUMS**

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\_\_\_ PROPOSAL COVER

X BID INSERTS (SH. NO.: 7-8, 8-8 )

X GENERAL NOTES (SH. NO.: K-DD )

\_\_\_ SPEC LIST (SH. NO.: )

\_\_\_ SPECIAL PROVISIONS: )

ADDED:

DELETED:

\_\_\_ SPECIAL SPECIFICATIONS:

ADDED:

DELETED:

X OTHER: PLAN SHEETS 5E-5N, 6A, 70

DESCRIPTION OF ABOVE CHANGES

(INCLUDING PLANS SHEET CHANGES)

BID INSERTS:

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SHEETS 7-8, 8-8: CHANGED BID CODE 4136-2001 (CY) TO 4136-2002 (CF).

GENERAL NOTES:

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SHEETS K-L: ADDED GENERAL NOTE FOR ITEM 404.

SHEETS L-N: ADDED AND REVISED NOTES FOR ITEM 421.

SHEETS O-CC: NOTES SHIFTED DUE TO ABOVE CHANGES.

SHEET DD: NEW SHEET DUE TO NOTES SHIFTING.

PLAN SHEETS:

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DESCRIPTION OF ABOVE CHANGES

(INCLUDING PLANS SHEET CHANGES)

(CONTINUED)

SHEET 5E: ADDED NOTE FOR ITEM 404; REVISED AND ADDED NOTES FOR ITEM 421.

SHEET 5F: REVISED AND ADDED NOTES FOR ITEM 421.

SHEETS 5G-5N: NOTES SHIFTED DUE TO ABOVE CHANGES.

SHEET 6A: CHANGED BID CODE 4136-2001 TO 4136-2002.

SHEET 70: IN ALTERNATE SUMMARY TABLE, CHANGED BID CODE ITEM 420-2003 TO 420-2041 AND CHANGED BID CODE ITEM 420-2004 TO 420-2042.

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	100	2002	001	PREPARING ROW DOLLARS and CENTS	STA	49.600	1
	110	2001		EXCAVATION (ROADWAY) DOLLARS and CENTS	CY	8,699.000	2
	110	2002		EXCAVATION (CHANNEL) DOLLARS and CENTS	CY	87.000	3
	132	2008		EMBANKMENT (FINAL)(DENS CONT)(TY D) DOLLARS and CENTS	CY	3,555.000	4
	164	2035		DRILL SEEDING (PERM) (RURAL) (CLAY) DOLLARS and CENTS	SY	22,895.000	5
	164	2041		DRILL SEEDING (TEMP) (WARM) DOLLARS and CENTS	SY	22,895.000	6
	166	2002		FERTILIZER DOLLARS and CENTS	TON	1.460	7
	168	2001		VEGETATIVE WATERING DOLLARS and CENTS	MG	120.100	8
	247	2041	020	FL BS (CMP IN PLC)(TY A GR 1)(FNAL POS) DOLLARS and CENTS	CY	6,159.000	9
	310	2021		PRIME COAT (MC-30, AE-P OR SS-1) DOLLARS and CENTS	GAL	5,360.000	10
	316	2222		AGGR(TY-PB GR-4S SAC-B) DOLLARS and CENTS	CY	222.000	11

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	316	2402		ASPH (AC-5, AC-10, CRS-2, OR HFRS-2) DOLLARS and CENTS	GAL	9,421.000	12
	341	2064		D-GR HMA(QCQA) TY-C SAC-B PG76-22 DOLLARS and CENTS	TON	2,683.000	13
1	401	2001		FLOWABLE BACKFILL DOLLARS and CENTS	CY	40.000	14
	403	2001		TEMPORARY SPL SHORING DOLLARS and CENTS	SF	508.200	15
	407	2005		SHEET PILING (PZ-22) DOLLARS and CENTS	SF	3,367.000	16
1	409	2014		PRESTR CONC PIL (16 IN SQ)(HPC) DOLLARS and CENTS	LF	972.000	17
	420	2021	003	CL C CONC (COPING) DOLLARS and CENTS	CY	22.000	18
1	420	2027	003	CL F CONC (BENT) DOLLARS and CENTS	CY	22.600	19
1	420	2087	003	CL F CONC (ABUT) DOLLARS and CENTS	CY	36.400	20
	420	2088	003	CL S CONC (DIAPHRAGM) DOLLARS and CENTS	CY	9.100	21
	425	2028		PREST CONC DOUB T-BEAMS (6T28) DOLLARS and CENTS	LF	445.500	22

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	425	2029		PREST CONC DOUB T-BEAMS (7T28) DOLLARS and CENTS	LF	594.000	23
	432	2019		RIPRAP (STONE PROTECTION)(12 IN) DOLLARS and CENTS	CY	198.000	24
	432	2040		RIPRAP (MOW STRIP)(5 IN) DOLLARS and CENTS	CY	42.000	25
	432	2050		RIPRAP (CONC)(CL B)(5 IN) DOLLARS and CENTS	CY	220.000	26
	450	2045		RAIL (TY T501)(MOD) DOLLARS and CENTS	LF	324.000	27
	464	2003		RC PIPE (CL III)(18 IN) DOLLARS and CENTS	LF	720.000	28
	464	2005		RC PIPE (CL III)(24 IN) DOLLARS and CENTS	LF	466.000	29
	464	2007		RC PIPE (CL III)(30 IN) DOLLARS and CENTS	LF	57.000	30
	467	2286		SET (TY II)(18 IN)(RCP)(6:1)(P) DOLLARS and CENTS	EA	48.000	31
	467	2288		SET (TY II)(24 IN)(RCP)(6:1)(P) DOLLARS and CENTS	EA	3.000	32
	467	2290		SET (TY II)(30 IN)(RCP)(6:1)(P) DOLLARS and CENTS	EA	2.000	33

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	496	2010		REMOV STR (BRIDGE 100-499 FT LENGTH) DOLLARS and CENTS	EA	1.000	34
	497	2001		SALV MATRL (CREDIT ITEM) DOLLARS and CENTS	LS	1.000	35
	500	2001	002	MOBILIZATION DOLLARS and CENTS	LS	1.000	36
	502	2001	022	BARRICADES, SIGNS AND TRAFFIC HAN- DLING DOLLARS and CENTS	MO	4.000	37
	506	2005		ROCK FILTER DAMS (INSTALL) (TY 1) DOLLARS and CENTS	CY	4.000	38
	506	2010		ROCK FILTER DAMS (REMOVE) DOLLARS and CENTS	CY	4.000	39
	506	2022		EARTHWORK (ERSN & SEDM CONT, IN VEH) DOLLARS and CENTS	CY	4.800	40
	506	2034		TEMPORARY SEDIMENT CONTROL FENCE DOLLARS and CENTS	LF	1,000.000	41
	508	2001		CONSTRUCTING DETOURS DOLLARS and CENTS	STA	8.400	42
	512	2017	001	PORT CTB (DES SOURCE)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	440.000	43

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	512	2018	001	PORT CTB (DES SOURCE)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	80.000	44
	512	2035	001	PORT CTB (STKPL)(LOW PROF)(TY 1) DOLLARS and CENTS	LF	440.000	45
	512	2036	001	PORT CTB (STKPL)(LOW PROF)(TY 2) DOLLARS and CENTS	LF	80.000	46
	530	2011		DRIVEWAYS (ACP) DOLLARS and CENTS	SY	1,083.000	47
	540	2001	002	MTL W-BEAM GD FEN (TIM POST) DOLLARS and CENTS	LF	587.500	48
	540	2011	002	MTL BEAM GD FEN TRANS (THRIE-BEAM) DOLLARS and CENTS	EA	4.000	49
	542	2001		REMOVING METAL BEAM GUARD FENCE DOLLARS and CENTS	LF	348.000	50
	544	2005		GDRAIL END TRT(INST)(WOOD POST)(TY II) DOLLARS and CENTS	EA	4.000	51
	544	2011		GDRAIL END TRT(REMOV)(WOOD POST)(TY II) DOLLARS and CENTS	EA	4.000	52
	560	2004	001	MAILBOX INSTALL-S (WC-POST) TY 3 FND DOLLARS and CENTS	EA	4.000	53



ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	560	2005	001	MAILBOX INSTALL-D (WC-POST) TY 3 FND DOLLARS and CENTS	EA	1.000	54
	644	2022		INS SM RD SN SUP&AM TY S80(1) SA(P) DOLLARS and CENTS	EA	20.000	55
	644	2025		INS SM RD SN SUP&AM TY S80(1) SA(T) DOLLARS and CENTS	EA	7.000	56
	644	2042		INS SM RD SN SUP&AM TY S80(2) SA(P) DOLLARS and CENTS	EA	2.000	57
	644	2058		RELOCATE SM RD SN SUP & AM TY S80 DOLLARS and CENTS	EA	14.000	58
	644	2060		REMOVE SM RD SN SUP & AM DOLLARS and CENTS	EA	14.000	59
	658	2232		INSTAL DEL ASSM (D-SW)TY C(BI-DIR) DOLLARS and CENTS	EA	13.000	60
	662	2114		WK ZN PAV MRK SHT TERM (TAB) TY Y DOLLARS and CENTS	EA	870.000	61
	668	2106		PREFAB PAV MRK TY C (W) (ARROW) DOLLARS and CENTS	EA	2.000	62
	668	2116		PREFAB PAV MRK TY C (W) (WORD) DOLLARS and CENTS	EA	2.000	63
	672	2015		REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	103.000	64

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
1	4136	2002		STRUCTURAL GROUT  DOLLARS and CENTS	CF	50.400	65
	5261	2001		GEOGRID BASE REINFORCEMENT (TY I)  DOLLARS and CENTS	SY	19,178.000	66
	6110	2002		REF PAV MRK TY I (W)(4")(SLD)(90 MIL)  DOLLARS and CENTS	LF	9,770.000	67
	6110	2003		REF PAV MRK TY I (W)(8")(SLD)(90 MIL)  DOLLARS and CENTS	LF	250.000	68
	6110	2006		REF PAV MRK TY I (Y)(4")(BRK)(90 MIL)  DOLLARS and CENTS	LF	750.000	69
	6110	2007		REF PAV MRK TY I (Y)(4")(SLD)(90 MIL)  DOLLARS and CENTS	LF	3,860.000	70
	6422	2001		PORTABLE CHANGEABLE MESSAGE SIGN(TY II)  DOLLARS and CENTS	DAY	100.000	71
				ALTERNATE NO. 1A  DOLLARS and CENTS			
	401	2001		FLOWABLE BACKFILL  DOLLARS and CENTS	CY	108.000	72
	409	2014		PRESTR CONC PIL (16 IN SQ)(HPC)  DOLLARS and CENTS	LF	936.000	73

PROJECT BR 2005(81)  
COUNTY REFUGIO

PROPOSAL SHEET  
TxDOT  
FORM 234-B I-61-5M

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	420	2041	003	CL C CONC (ABUT)(HPC)  DOLLARS CENTS and	CY	39.600	74
	420	2042	003	CL C CONC (BENT)(HPC)  DOLLARS CENTS and	CY	24.800	75
	4136	2002		STRUCTURAL GROUT  DOLLARS CENTS and	CF	120.000	76

**GENERAL NOTES:**

**Mandatory Pre-Bid Meeting**

A mandatory pre-bid conference will be held at the Corpus Christi Texas Department of Transportation District office at 1701 S.P.I.D. at 10:00 AM on Thursday March 29, 2007. Bidders should report to the main entrance of the District office, the pre-bid meeting will be held in the down stairs conference room. The meeting will be video recorded. Bids submitted by bidders who do not attend this pre-bid conference will not be accepted.

The Contractor shall provide for safe and convenient ingress and egress to abutting property, highway, public road, and street crossings for all vehicles. The Contractor shall advise the Engineer in advance as to his proposed methods for accommodating traffic during construction at all locations and these methods shall be approved by the Engineer before any portion of an existing road or street is removed or disturbed. The Contractor shall remove or obliterate all conflicting pavement markings.

In the event utility lines needing unforeseen adjustments are encountered, the Contractor shall prosecute the work in such a manner and sequence to allow adjustments to be done by others. An extension of work time may be granted, if necessary in the opinion of the Engineer, for this delay.

No person or tool shall be permitted within 8 feet of high voltage electrical lines (600 volts or greater) unless arrangements have been made with the Power Company. No equipment shall be permitted within 10 feet of high voltage electrical lines unless there are warnings posted and an insulated guard is attached to boom or bucket. The Contractor shall notify the Engineer if there are any conflicts with high voltage electrical lines.

The locations of utilities, either underground or overhead, shown within the limits of the right-of-way are approximate only and shall be verified by the Contractor before beginning construction. This work will not be paid for directly but shall be considered subsidiary to the various bid items. Prior to beginning any excavation work in the area of existing utilities, the Contractor shall contact the utility companies for exact locations to prevent any damage or interference with present facilities. The Texas One Call System shall be notified at the following toll free number: (1-800-245-4545). This action however shall in no way be interpreted as relieving the Contractor of their responsibility under the terms of the contract. The Contractor shall repair any damage caused by their operations, deemed the Contractor's liability by the Engineer, at their own expense and shall restore facilities to service in a timely manner. All information concerning utility verification shall be provided to the Engineer.

All dimensions shall be field verified prior to the initiation of any work on the contract.

All broken concrete shall become the property of the Contractor and shall be disposed of in a manner and location approved by the Engineer.

The Contractor shall take appropriate measures to protect all adjacent property from any damage. If any damage occurs, the Contractor shall restore the damaged property to a condition comparable to that before the damage was incurred. This shall be done at the Contractor's own expense.

All existing pavement which is damaged by the Contractor in the progress of his work will be repaired as quickly as possible and as directed by the Engineer. Where existing pavement adjoins new pavement, the existing pavement shall be saw cut to ensure a neat transverse and/or longitudinal line to assure a smooth tie-in. There will be no direct payment for this work, as such work shall be considered subsidiary to the various bid items.

All materials, labor and incidentals required for the Contractor to provide for traffic across the highway and for ingress and egress to both private and commercial property in accordance with Item 7.7 of the standard specifications shall be considered subsidiary to the various bid items.

The Contractor shall be required to make every effort to control dust caused by their construction operations. Water required for curing base materials, maintenance of roadway, and dust control will not be paid for directly, but shall be considered subsidiary to the various contract items. Water shall conform to Item 204 except for measurement and payment.

The Contractor shall maintain the right of way of construction debris and surplus materials as shown in the plans and/or as determined by the Engineer.

When working in street intersections, the Contractor shall schedule their work such as to minimize intersection closures. During non-working hours all public road intersections will be open to the traveling public unless otherwise authorized by the Engineer.

The following standard sheets have been modified:

DTB-O (MOD), DTBEB (MOD), DTBND (MOD), CP (MOD),  
TYPE T501 (MOD)

**ITEM 5**

Benchmark locations and elevations are shown on the Horizontal and Vertical Control Data sheet.

The Contractor will use construction surveying Method A as well as offset the proposed centerline before starting any surfacing and/or grading operations. The offset line will be at a distance such that it is not affected by construction activities. It will consist of a positive system of stakes and hubs at 100-foot intervals, or an alternative system as directed and/or approved by the Engineer. This offset line will be maintained throughout the project duration.

The Contractor will establish the roadway centerline for surface treatments and striping operation. No direct compensation will be allowed for this work; as such work is to be considered subsidiary to the various bid Items of the Contract.

It will be the Contractor's responsibility to mark the location of the standard pavement markings including edge lines, transitions, passing and no passing zones.

It shall be the Contractor's responsibility to mark the location of the standard pavement markings including edgelines, & turning lanes.

**Item 6**

Inspection of work accomplished in concrete product plants normally will be handled as follows. Precast pipe will be inspected by TxDOT's Materials and Pavement Section. Any precast units that are cast in precasting yards where bridge components or pipe are being cast will be inspected by TxDOT's Materials and Pavement Section. Any precasting yards supplying precast units to projects outside of the Corpus Christi district will be inspected by TxDOT's Materials and Pavement Section.

The structures to be removed have coatings which may contain hazardous materials.

**ITEM 8**

Working days will be computed and charged in accordance with Article 8.3.A.1 Five-Day Workweek, except as outlined below for the Bridge Construction Phase of Dry Creek Bridge. A separate Bridge Construction Phase of Dry Creek Bridge is designed to facilitate construction of the bridge as fast as possible.

This Bridge Construction Phase is defined as the closure of the roadway, building the bridge and any relevant approach work, and opening the new bridge to through traffic. Approach work which allows one operational lane in each direction on FM 774 for the full length of the project will not be considered as part of this Bridge Construction Phase. During the Bridge Construction Phase, work is allowed to be performed during the 24 hours per day and seven days per week. During the Bridge Construction Phase, time will be charged for all hours regardless of hours actually worked, weather conditions, materials or supplies, and equipment or labor availability which could impede the prosecution of the work. Any prefabricated bridge elements shall be ready for erection prior to the beginning of this phase of work.

The time allowed for the Bridge Construction Phase is 240 hours. If the bridge is completed, as defined above, within or earlier than the stated number of hours, a fixed bonus of \$30,000.00 plus an additional \$416.67 per hour early for a maximum of 36 hours will be awarded. If the bridge is not completed, as defined above within the stated number of hours, contract administration and road user liquidated damages of \$418.04 per hour will be assessed for each hour in excess of the stated number of allowable hours for the Bridge Construction Phase, until the bridge is complete and open to traffic. The working period charged during the Bridge Construction Phase shall also be included in the computation of the total time charges for the total completion of the project.

Provide CPM scheduling using Primavera software, in accordance with the Special Provision to Item 8. Submit a separate detailed schedule for the Bridge Construction Phase as indicated below. The Contractor shall submit a schedule based on working hours for the Bridge Construction Phase as defined below with submission of his work schedule at the preconstruction conference

The Contractor may choose the date for commencing the Bridge Construction Phase within the time frame of June 1 to August 1, but must notify the Engineer of the anticipated date a minimum of two weeks in advance. At this time, the Contractor shall submit a detailed construction schedule and plan for the Bridge Construction Phase. When the Contractor has made a final determination of the start date, the Contractor must notify the Engineer a minimum of two days in advance.

The Contractor's attention is brought to the fact that other contracted projects may be under construction concurrently within the same limits of the project. This includes utility work performed by the utility companies or their respective contractor's.

**ITEM 9**

The Contractor must submit material-on-hand payment requests at least three (3) working days prior to the end of the month for payment on that month's estimate. The cutoff date for payment of the monthly estimate shall be three (3) working days prior to the end of the month. All requests shall be submitted through the prime Contractor.

**ITEM 100**

The limits of preparing right of way are from station 25+90 to station 75+50, including transitions, area of construction of street returns, and intersections. Removal of any obstructions within the right-of-way, but not shown on the plans shall be included under ITEM 100.

There may be additional obstructions that are discovered within the project limits, which require removal by the Contractor and they are to be considered subsidiary to Item 100.

**ITEM 110**

Prior to contract letting, reproducible design cross sections may be borrowed from the Area Engineer's office for the purpose of making copies for prospective bidders. A twenty-four (24) hour notice will be required.

The successful bidder will be given design cross sections used to estimate earthwork quantities. This information will be in ASCII print format on a computer disk.

The Contractor shall confirm to the Engineer the extent of, if any, cement stabilized material present within the existing roadbed. Removal of such material will not be paid for directly, but shall be considered subsidiary to Item 110.

Water required for curing base materials, maintenance of roadways, and dust control will not be paid for directly, but shall be considered subsidiary to the various contract items. Water shall conform to Item 204 except for measurement and payment. An approved water supply shall be used.

In those instances where fixed features require, the governing slopes for the project may be varied from between the limits and to the extent determined by the Engineer.



**County: Refugio****Control: 0447-05-055****Highway: FM 774**

Materials larger than 4 inches in size within the limits of the right of way and not incorporated in the finished roadway section shall be removed from the right of way and disposed of in a manner suitable to the Engineer at the entire expense of the Contractor .

When base and/or pavement structure is placed under this project, all earth cuts shall be scarified to a uniform depth of at least 6 inches below the required finished grade elevation for the workable roadbed width. The material shall be mixed and reshaped by blading and then sprinkled and rolled in accordance with section 132.3.D.2.

Additional excavation may be required, as directed by the Engineer to remove soft wet areas in the existing side road ditches prior to placing embankment or pavement materials. Payment shall be made under Item 110 "Excavation". The quantity will be measured by the average end area method by taking cross sections prior to excavation and after the excavation is complete prior to placement of the Embankment. Additional embankment material needed to replace the deleterious material will be paid for under Item 132 "Embankment".

**ITEM 132**

The Contractor shall remove all excess embankment material at project completion. Removal of embankment material shall not be paid for directly, but shall be considered subsidiary to Item 132. All embankment material removed shall become the property of the Contractor and shall be disposed of in a manner and location approved by the Engineer.

**ITEM 164, 166, & 168**

Seeding, fertilizer, and vegetative watering have been set up to provide erosion control measures for the area between the edge of pavement and the R.O.W. Line. The Contractor shall seed these areas as shown on the plans or as directed by the Engineer.

Vegetative watering shall continue as directed by the Engineer throughout the duration of the project at a rate of 13MG/Ac/Mo unless otherwise directed by the Engineer.

Fertilizer used shall have an NPK ratio of 16-8-8 and shall be applied at rate of 100 LB of Nitrogen per Acre of seeded area, or as directed by the Engineer.

**ITEM 247**

Flexible base materials shall come from a source approved by the Engineer. If the flexible base comes from a stockpile, the stockpile shall be tested before delivery on the road. The

**County: Refugio**

**Control: 0447-05-055**

**Highway: FM 774**

stockpile shall be built in lifts not to exceed 2 feet and in a manner as to obtain a minimum working face of not less than 10 feet and a maximum working face of not more than 20 feet. Final acceptance of flexible base material shall be from tests made from windrow samples and the stockpile.

Testing of the liquid limit shall be in accordance with the test method Tex-104-E (Machine method).

Density requirements in access driveways, intersections, and other small or irregular areas may be waived provided the material is sprinkled and compacted to the satisfaction of the Engineer.

The Contractor shall be required to stake (blue top) the lines and grade as shown in the plan and profile sheets.

### **ITEM 300 & 302**

If emulsion asphalt is used, the Engineer shall approve the pre-coat material for the aggregate.

When emulsions are used as the pre-coat material, the pre-coated aggregate shall be adequately dried to the satisfaction of the Engineer. It will be the responsibility of the Contractor/Producer to provide adequate drying and curing periods before and after the delivery of the aggregates.

The Engineer reserves the right to reject any pre-coated aggregate which is improperly coated or otherwise unsatisfactory for use.

Flakiness Index for siliceous aggregates, as determined by test method TEX-224-F, shall not exceed 17.

Aggregates used for this Item shall be a minimum of Class B as published in the "Aggregate Quality Monitoring Program Rated Source Quality Catalogue".

### **ITEM 310**

When MC-30 or AE-P is used the application rate shall be applied at the rate of 0.15 GAL/SY as soon as practical and as soon as weather conditions permit.

When SS-1 is used, the emulsified asphalt shall be a mixture of approximately 5% SS-1 and 95% water unless otherwise approved by the Engineer. Water for the emulsified asphalt will not be paid for directly, but shall be considered subsidiary to Item 310. When SS-1 is used the application will be during the time the flexible base finishing operations. SS-1 is to be applied at a rate of 0.15Gal/Sy/In. The SS-1 is to be worked into the top 2 inches of the flex base during the finishing operations.

**ITEM 316**

Asphaltic material shall not be placed when general weather conditions, in the opinion of the Engineer, are not suitable.

Paper and other materials used for joints shall be picked up immediately and disposed of properly as directed by the Engineer.

Material rates shown are based on AC and may be adjusted by the Engineer depending on the material used, and the existing condition/type of the roadway surface.

The Engineer shall approve the type and grade of asphalt to be used and the temperature at which the asphalt is applied.

Asphalt material and aggregate for the one course surface treatment shall be applied at the rates approved by the Engineer. A test section(s) of not more than 500 LF each may be required by the Engineer to assist in the determination of the required rates of application. If so desired by the Engineer, the test section(s) may be traffic tested over night, prior to a full day's production.

Any visible sign of excessive dust from the aggregate stockpile or while handling the material during construction of this Item will be a sign of unclean material and if so directed by the Engineer, the Contractor will be required to clean the rock to minimize non-adherence of aggregate to the asphalt. The cleaning method shall be approved by the Engineer.

For this project the asphalt season for placement of asphalt surface courses shall be from March 15 to November 15, unless otherwise approved by the Engineer in writing.

All paved surfaces shall be broomed and cleaned of surplus aggregate before opening to traffic as directed by the Engineer. All surfaces sealed during a working day and adjacent paved surfaces shall be broomed before the end of the day as directed by the Engineer.

The location of aggregate stockpiles shall be approved by the Engineer. The aggregate shall be free of excess surface moisture, as determined by the Engineer, before application.

The rates of application and the estimated quantities of aggregate are based on the usual or average gradation of known materials. Prior to shipping aggregates to the project, the Contractor shall furnish the Engineer with samples of aggregates he/she proposes to use so that gradation may be determined and rate of application changed if necessary.

Traffic will not be permitted on the surface treatment until authorized by the Engineer.

The Contractor's attention is directed to the fact that all aggregates furnished are subject to testing after delivery to the job site.

#### **ITEM 341**

Asphalt binder for the TY C HMA CP shall have a performance grade of PG76-22.

The Contractor shall provide proof of current certification for all hot mix specialists employed on this project.

All coarse aggregates shall be a minimum class of "B" as published in the Aggregate Quality Monitoring Program Rated Source Quality Catalogue.

Coarse aggregates used shall be subjected to five cycles of the magnesium sulfate soundness test in accordance with test method TEX-411-A. The loss shall not be greater than 35%.

If aggregates are blended, each individual aggregate shall not have a loss greater than 55% and the blend shall not have a loss greater than 35%.

Crushed gravel screenings may be used with, or in lieu of stone screenings.

ACP areas having surface irregularities or segregation that are deemed unacceptable by the Engineer shall be removed and replaced by the Contractor in a manner approved by the Engineer. The work and materials involved in removing these areas and replacing the asphaltic concrete with smooth, uniform, compacted mix will not be paid for directly but shall be considered subsidiary to Item 341.

HMA CP placed on shoulders separately will require in-place air void testing, unless otherwise directed by the Engineer in writing.

The Contractor, upon direction by the Engineer, shall be required to use a cut-off chute when placing hot mix on narrow width locations.

For all courses, the spreading and finishing machine shall be equipped with an approved automatic dual longitudinal screed control system and automatic transverse screed control system. The longitudinal controls shall have a minimum 40 feet grade reference length and be capable of operating from any longitudinal grade reference including a stringline, ski, mobile string line, or matching shoe.

At the beginning and end of the project, the asphaltic concrete pavement shall be transitioned from the depth shown on the typical sections to the existing grade to provide a smooth riding surface, unless otherwise directed by the Engineer. The length of the transition shall be designated by the Engineer.

All longitudinal joints adjacent to a travel way shall be constructed with a joint maker providing a maximum one inch vertical edge (1/2" desirable) with an adjacent 6:1 taper. Outside edge joints shall have a 6:1 taper or be backfilled the same day or as directed by the Engineer.

*Place mixture when the roadway surface temperature is equal to or higher than the temperatures listed in Table 1 unless otherwise approved or shown on the plans. Measure the roadway surface temperature with a handheld infrared thermometer. The Engineer may allow mixture placement to begin prior to the roadway surface reaching the required temperature requirements if conditions are such that the roadway surface will reach the required temperature within 2 hrs. of beginning placement operations. Unless otherwise shown on the plans, place mixtures only when weather conditions and moisture conditions of the roadway surface are suitable in the opinion of the Engineer.*

**Table 1**  
**Minimum Pavement Surface Temperatures**

		Minimum Pavement Surface Temperatures in Degrees Fahrenheit	
Specification Item Number	High Temperature Binder Grade	Subsurface Layers or Night Paving Operations	Surface Layers Placed in Daylight Operations
Items 340, 341 & 344	PG 64	45	50
	PG 70	55 <sup>1</sup>	60 <sup>1</sup>

County: Refugio

Control: 0447-05-055

Highway: FM 774

	PG 76	60 <sup>I</sup>	60 <sup>I</sup>
Items 342 and 346	PG 76	65 <sup>I</sup>	70 <sup>I</sup>
SS 3000 & SS 3001	Asphalt Rubber (A-R)	65 <sup>I</sup>	70 <sup>I</sup>

*Note 1: Contractors may pave at temperatures 10°F lower than the values shown in Table 1 when utilizing a paving process or equipment that eliminates thermal segregation. In which cases, the contractor must use either an infrared bar attached to the paver, or a hand held thermal camera, or a hand held infrared thermometer operated in accordance with Test Method 244-F to demonstrate to the satisfaction of the engineer that the uncompacted mat has no more than 10°F of thermal segregation.*

**ITEM 400**

Backfill in trenches below the top of structure and all backfill in trenches for pipe culverts shall be compacted to a final condition comparable in density and consolidation to the adjacent undisturbed material by any method satisfactory to the Engineer. Water ponding of cohesionless materials will not be allowed unless approved by the Engineer.

All joints shall be wrapped with sand proof tape following the manufacturer's recommendations or an equivalent method for joint sealing. All joints of pipe placed in cement stabilized backfill shall be wrapped in sandproof tape. Alternatively, joints conforming to ASTM C443 may be sealed with rubber gaskets which meet ASTM C361.

Where the soil in which structures are placed is other than a cohesionless type material, then the cohesionless material if used for backfill shall be no higher than the top of the structure without the approval of the Engineer.

Cement stabilized backfill shall consist of 2 sacks (94 lbs each) of cement to 1 cubic yard of sandy material as approved by the Engineer. It shall be used at all locations where culvert pipe is placed under the roadway. The depth and width of placement of cement stabilized backfill material shall be shown on the "Miscellaneous Details" sheet.

**ITEM 404**

Pilot holes may be extended to a depth of 15 feet below finished ground elevation with a diameter not to exceed 18 in.

The Contractor may choose to conduct a pile load test at his expense to refine installation.

For the Precast Option substructure option, pile plan placement tolerance is +/- 2" in both directions.

**ITEM 407**

Steel Sheet piling shall be hot-dipped galvanized in accordance with Item 445 "Galvanizing".

**ITEM 409**

Prestressed concrete piling shall utilize Class "H (HPC)" Concrete and sulfate-resistant concrete. Contractor to submit shop drawings for the prestressed concrete piling.

**ITEM 420**

Except as otherwise noted in the plans, as soon as the forms are removed from all concrete an ordinary surface finish shall be applied to the exposed concrete surfaces.

Placement of reinforcement dowels for riprap shall conform to Item 420.

For this project all Class "B" concrete shall be considered miscellaneous concrete as defined in the guide schedule of sampling and testing. In the event test specimens fail strength requirements, the Contractor, with prior approval of the Engineer, shall take cores at the Contractor's expense.

Interior bent concrete will be paid for at plan quantity.

**ITEM 421**

For this project, the concrete strength shall be determined by 28-day compression testing by use of test method TEX-418-A "compressive strength of cylindrical concrete specimens". The 7-day job control strength shall be determined in accordance with test method TEX-427-A, part III, cylindrical concrete specimens shall be four (4") inches in diameter by eight (8") inches in length. The Contractor may cast additional specimens for schedule restriction testing and acceptable testing.

Trial batch testing for cast-in-place substructure and superstructure concrete must be done in advance of construction, showing the strength versus time relationship and results provided to the Engineer.

The Engineer will cast and test all concrete cylinders. The Contractor shall furnish all test molds and wheelbarrow. The test molds shall be of disposable plastic type as approved by the Engineer. The Contractor will remove the test specimens from the molds and transport them to the proper curing location at the schedule designated by the Engineer. Due to time constraints of the accelerated bridge construction phase, TxDOT testing resources will be on-call after standard working hours.

The Contractor shall furnish a cylinder-curing tank including a tank heater. The tank and tank heater shall be approved by the Engineer.

When a 7-day job control test value is more than 10 percent below the required job control strength or when three (3) consecutive values fall below the required job control strength, an investigation of the test procedure, the quality of the materials, and batching operations shall be performed by the Contractor and Engineer to determine the likely cause or causes of the problem. Immediate remedial action shall be taken to correct the problem including redesign of the concrete mix when warranted.

For this project, estimating the concrete strength using the maturity method will be allowed by use of test method TEX-426-A "estimating concrete strength by the maturity method". The meter and procedure shall be approved by the Engineer before starting construction. The Contractor Shall provide for the Department's use one (1) computer or one (1) laptop computer system for concrete batch plant inspection and shall be subsidiary to Item 421.

The following software and hardware listed below or approved equal or better shall be provided:

**SOFTWARE:**

MICROSOFT WINDOWS XP PROFESSIONAL, MICROSOFT OFFICE XP PROFESSIONAL OR GREATER, WINFAX PRO VERSION 10.0 OR GREATER, WINZIP 9.0 OR GREATER, ADOBE ACORBAT READER 6.0 OR GREATER, AND McAfee VIRUS SCAN 7.0 OR GREATER TO INCLUDE UPDATES FOR DURATION OF PROJECT.

**HARDWARE:**

COMPUTER or LAPTOP COMPUTER:

INTEL PENTIUM 4 PROCESSOR OR BETTER (3.0 GHz



MINIMUM) WITH 533MHZ OR 800MHZ FRONT-SIDE BUS, ONE GB MINIMUM OF DDR RAM, 40 GB HARD DRIVE OR GREATER WITH RPM SPEED OF 5400 OR GREATER, DISPLAY OF 15 INCHES OR GREATER WITH MAXIMUM RESOLUTION OF 1024 X 768 OR GREATER, 64MB OR GREATER VIDEO/GRAPHICS CARD (CAN BE SHARED RAM), TOUCH PAD MOUSE, BUILT-IN HIGH-SPEED V.90/V.92 56KB DATA/FAX MODEM, BUILT-IN 10/100 BASE-T FAST ETHERNET INTERFACE, 1 USB 2.0 PORT, 1 EXTERNAL VIDEO PORT, 1 PARALLEL PORT, 1 SERIAL PORT, 1 EXTERNAL KEYBOARD/MOUSE PORT, 1 PCI I/II/III PCMCIA SLOT, 1 1.44MB FLOPPY DISKETTE DRIVE(FDD), 1 DVD/CDRW COMBO DRIVE.

**PRINTER:**

PORTABLE/MOBILE COLOR – MINIMUM 9 PPM BLACK, MINIMUM 8 PPM COLOR, BLACK RESOLUTION 1200X1200, COLOR RESOLUTION 4800X1200 OPTIMIZED COLOR DPI, LOW INK INDICATOR, PRINT CANCEL BUTTON, PRINT CONNECTIVITY VIA PARALLEL, USB, OR INFRARED, PRINT MEDIA CAPABLE OF LETTER, PRINTER MUST BE ABLE TO RUN ON LITHIUM-ION BATTERY OR AC POWER SUPPLY, AND 1 USB 2.0 RATED 6 FT. CABLE.

The contractor shall deliver the specified software and hardware to be used by the Department prior to the commencement of any work on the project. The Contractor shall provide carrying cases for both the laptop computer and printer. The Contractor shall purchase and provide to the Department updates to the software as required to remain compatible with TxDOT's currently used software. In the case of needed repairs for the software or hardware, the Contractor Shall provide a backup computer system meeting the same Specifications within twenty-four (24) hours. At the completion of the project, the Contractor shall retain all hardware and software.

Provide sulfate resistant concrete for the following classes of Concrete:

- 1.) Class "C (HPC)"
- 2.) Class "H (HPC)" (Piling only)

Air entrained concrete is not required.

**ITEM 424**

Submit shop drawings for the following non-stressed members:

1.) Precast abutments and interior bents.

**ITEM 432**

The individual locations and estimated quantities of riprap shown on the plans may be changed by the Engineer during construction according to the need for erosion control.

All concrete riprap shall be reinforced as shown on the plans or as directed by the Engineer.

Where existing riprap adjoins new riprap, the existing riprap shall be cut to ensure a neat transverse and/or longitudinal line to assure a smooth tie-in. This work will be subsidiary to Item 432.

**ITEM 462**

Either cold applied plastic asphalt sewer joint compound or cold applied plastic gaskets shall be used for all joints. Alternatively, joints conforming to ASTM C443 may be sealed with rubber gaskets which meet ASTM C361.

Precast box and RCP lifting holes shall be patched with a quick setting, high strength concrete pipe patch. Concrete plugs with ramneck will not be permitted.

Inspection of work accomplished in concrete product plants normally will be handled as follows: Precast pipe will be inspected by the materials and test division. Any precast units that are cast in precast yards where bridge components, culverts, or pipe are being cast will be inspected by the materials and tests division. Any precasting yards located outside the Corpus Christi district supplying precast units to projects within the Corpus Christi district will be inspected by the materials and tests division. All other precast units will be inspected by the Area Engineer.

**ITEM 464**

For this project, Class "C" bedding shall be used. The pipe shall be bedded in a foundation of granular material (sand) shaped to fit the lower portion of the pipe exterior for at least 10% of the overall height.

**ITEM 467**

In the event a concrete pipe collar is required as determined by the Engineer, the concrete shall meet the requirements of Class "B" concrete. The concrete pipe collar shall be a minimum of 12 inches wide (6" +/- either side of the joint) and have a minimum thickness of 6 inches measured from the outside of the pipe and be completely around the pipe. Reinforcement for concrete will be w 2.9 x w 2.9 x 4 x 4 wire mesh. All labor, materials and incidentals necessary to complete the work required will not be paid for directly, but shall be considered subsidiary to the various bid items.

Riprap will be required on all safety end treatments. The riprap shall be a minimum of 18" wide around the perimeter of the safety end treatments of concrete pipe culverts and a minimum of 2' wide around the perimeter of the safety end treatments of concrete box culverts. The riprap shall be thickened to 8" within 1'-0" around the outside perimeter of the concrete apron.

The inside surfaces of the pipe in the sloped end sections shall be formed to the satisfaction of the Engineer, and the ends shall have a uniform slope.

Precast safety end treatment sections will be allowed. Prior to their use, the Contractor shall submit a shop drawing to the Engineer for approval.

**ITEM 496**

Identify locations where cuts in steel will be made a minimum of 30 days prior to start of steel structure removal. The Department will arrange for a separate Contractor to remove hazardous material off the steel in accordance with the following to allow for disassembly:

- A four inch wide strip around bearing attachments and at the anchor bolts.
- As requested elsewhere and approved by the Engineer.

Paint stripping for desired cuts at locations not listed above will be arranged by the Department at the Contractor's expense. Coordinate with the Department for paint removal operations and provide traffic control to safely allow paint removal. Provide access to the locations where cuts are to be made to facilitate paint removal. The Engineer will not suspend time for paint testing or paint removal operations and additional time will not be granted for this work. Traffic control for this work will be paid for using other Items. Paint removal shall take place before the Bridge Construction Phase as identified in the General Notes to Item 8.

**ITEM 497**

Painted steel may be reused or disposed of at a steel recycling or smelting facility. Maintain and make available to the Engineer invoices and other records showing the reuse owner or for recycling, records obtained from the recycling or smelting facility showing the received weight of the steel and the facility name.

**ITEM 500**

"Materials on hand" payments will not be considered in determining percentages used to compute payment for the item "Mobilization".

**ITEM 502**

The beginning and end project signs shall be provided by the Contractor and placed in accordance with the BC sheets and plan sheets. Advance warning signs shall be installed as shown on the plans and in compliance with the BC sheets, or as directed by the Engineer.

All signs, barricades, and pavement markings shall conform to BC-03 standard sheets, TCP sheets, and the 2006 "Texas Manual on Uniform Traffic Control Devices".

The Contractor may be required to furnish additional barricades, signs, and warning lights to maintain traffic and promote motorist safety. Any such additional signs and barricades shall be considered subsidiary to Item 502. All signs, barricades, and posts shall be either new or freshly painted.

Traffic control for daytime lane closures shall be in accordance with the appropriate standard sheet.

Before any obstruction is placed on the roadway, warning devices must be positioned as indicated on the traffic control plan, BC sheets, TCP sheets and the TMUTCD. Traffic control devices as shown in the plans may be adjusted to fit field conditions as directed by the Engineer.

Plastic drums shall be used in accordance with the plans and manufacturer's recommendations and shall have a seven (7") inch warning reflector, as approved by the Engineer.

**County: Refugio****Control: 0447-05-055****Highway: FM 774**

After completion of the project, when removing the barricades and signs the Contractor shall fill and compact any holes left by the barricades or sign supports and restore the area in which the signs were removed to its original condition.

Any other area or surface disturbed during the placing or removal of barricades and signs or for any other reason shall be restored to its original condition.

The Contractor shall be responsible for maintaining the existing roadway surface when the traffic control plan is being utilized. This work will not be paid for directly but shall be considered subsidiary to various bid items.

The Contractor shall have an employee on call nights and weekends or any other time that work is not in progress with a local address for maintenance of signs and barricades. This employee shall be located within one hour of traveling time to the project site. The Contractor shall notify the Engineer in writing of the name, physical address, and telephone number of this employee or these employees. The Engineer shall furnish this information to local law enforcement officials.

After the Contractor has been notified in writing by the Engineer, the time frame for the Contractor to provide properly maintained traffic control devices before they are considered to be in noncompliance with this Item, is 48 hours regardless of the days of the week involved. If the Contractor doesn't take the necessary steps approved by the Engineer to eliminate the noncompliance conditions within 48 hours established above, payment for this Item for the month(s) in noncompliance can be withheld as covered in Section 502.4.B.

The Contractor will be required to furnish two (2) trailer mounted speed control monitor's for the duration of this project as directed by the Engineer. The monitor units used for this project shall meet or exceed the examples listed below:

Precision Solar Controls Solar Mobile Traffic Monitor SMTM-2012

PSE Amber Smart Speed Monitoring Awareness Radar Trailer

MPH Traffic Monitor Trailer Model 3

Stalker Speed Guard or TxDOT approved equal

Furnishing these monitors shall not be paid for directly, but shall be considered subsidiary to bid Item 502

**ITEM 504**

The following buildings will be required for the Engineer's use:

- 1 - Type C Structure, field office
- 1 - Type D Structure, asphalt mix control laboratory

***GENERAL NOTES AND SPECIFICATION DATA—***  
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All structures shall be provided before work is begun on the pertinent construction items for which it is needed.

All structures shall be separate from the Contractor's office.

All structures shall have keyed exterior deadbolt locks on all exterior doors. Two keys for each structure shall be provided to the Engineer.

All structures shall be equipped with a hot water dispenser or hot water capable of generating one gallon of water at 140 degrees Fahrenheit with acceptable water pressure. Collection and disposal of trash and janitorial services that are acceptable to the Engineer will be provided. Space heaters for heating any structure are unacceptable.

Portable structures shall be support blocked for stability and tied down according to applicable zoning requirements or as directed by the Engineer.

A lockable, chain link security fence shall be placed around the perimeter of all structures and parking areas. Two keys shall be provided to the Engineer. The dimensions of the fence will be as directed by the Engineer.

The Type D structure shall be equipped with the following in addition to requirements specified under Item 504:

- A. SAFETY EQUIPMENT
  - (1) ONE EYE WASH STATION
  - (2) ONE FIRE EXTINGUISHER
  - (3) ONE FIRST AID KIT

The Type D structure shall be at least 12 feet by 32 feet and 8 feet high. The floor area will be partitioned into a minimum of two interconnected rooms, each room furnished with an exterior door and a door between rooms. All doors will have a minimum width of 36 inches and 80 inches in height. All exterior openings will be secured with burglar bars. The floor shall have sufficient strength to support the testing equipment and have an impervious covering.

The Type D structure shall include access to a bathroom facility from the interior. The laboratory and bathroom facility will have the walls, ceiling and floor insulated such that the air temperature can be maintained at 76 degrees Fahrenheit at all times. The Contractor is responsible for maintaining all mechanical, electrical and plumbing facilities at all times. An air exhaust shall be located, so solvent vapors are drawn away from the workers. The ovens used to dry aggregate, cure, and ignite asphalt mixes will be vented upward to the outside. The contractor will connect the vent ducts to the ovens. The laboratory will be furnished with work counters measuring 36 inches in width and 36 inches in height along the walls. The laboratory will have a minimum total work counter length of 20 feet. A laboratory sink measuring 24 inches by 30 inches and 12 inches deep will be provided with adequate, clean, potable water supply for testing.

The Type D structure shall be provided with a 240 volt electrical entrance service. The service shall consist of a minimum of 4 – 120 volt circuits with 20 amp breakers and no more than two grounded convenience outlets per circuit and provisions for a minimum of two 220 volt outlets for ovens with vents to the outside. The laboratory portion will be equipped with at least seven 20 amp-110 volt outlets, four (4) 30 amp-220 volt outlets, two light switches on the wall and fluorescent ceiling lights capable of providing lighting meeting **ANSI** standards for industrial lighting. All outlets will be compatible with the electrical requirements of the equipment to be used for testing.

For this project, asphalt content will be determined utilizing the ignition method. The room to contain the ignition oven shall be adequately power ventilated and contain a NEMA 6-50r (208/240 v, 50 a) outlet within 2.5 feet of the ignition oven location and an independent exhaust outlet to the outside no further than 8 feet from the oven. The surface for the ignition oven location shall be level, sturdy, and fire-proof with at least a 6-inch clearance between the furnace and other vertical surfaces.

The Type C structure shall be a minimum of 384 square feet for this project. Furniture to be provided shall include 2 desks, 4 office chairs, 1 drafting table, 1 drafting stool, 1 bookcase and 2 5-drawer filing cabinets. All furnishings shall meet the approval of the Engineer or his/her designated representative.

**County: Refugio****Control: 0447-05-055****Highway: FM 774**

The Type C structure shall be air-conditioned, heated, and ventilated as directed by the Engineer. In addition, the building shall be furnished with an approved washroom equipped with a tank flush toilet. The building shall be equipped with electricity, primary voice phone line, secondary data phone line, sewer, and water. The arrangement and number of outlets for these utilities shall be as directed by the Engineer. The Contractor shall pay for all utility meter deposits and utility service bills.

The Contractor will provide and pay for all utility services (i.e. - electrical service, water, sanitary sewer, etc.), Internet service provider charges, 2 telephone line installations (one voice line and one data line), and all associated monthly service charges. The telephone lines provided will be separate from other lines.

The Contractor shall provide the Engineer with the following office equipment: two telephones, one stand-alone fax machine, and one office copier. Each piece of office equipment shall be approved by the Engineer before delivery to the project site.

The Contractor shall provide a desktop microcomputer for TxDOT's exclusive use. The following software and hardware listed below or approved equal shall be provided:

**SOFTWARE:** MICROSOFT WINDOWS XP, MICROSOFT OFFICE XP PROFESSIONAL OR GREATER, WINFAX PRO, VERSION 9.0 OR GREATER, WINZIP 8.0 OR GREATER, ADOBE ACORBAT READER 5.0 OR GREATER, NETSCAPE NAVIGATOR 4.78 OR GREATER, MICROSOFT INTERNET EXPLORER 5.5 OR GREATER, AND McAfee VIRUS SCAN 4.5.0 OR GREATER.

**HARDWARE:** INTEL PENTIUM 4 PROCESSOR OR BETTER (2.0 GHz MINIMUM), ONE GB MINIMUM OF DDR RAM, TWO SPARE PCI EXPANSION SLOTS. AT LEAST 2 SPARE PCI EXPANSION SLOTS SHALL BE AVAILABLE ON THE MOTHERBOARD AFTER ALL THE COMPONENTS REQUIRED BY THIS SPECIFICATION ARE INSTALLED, 40 GB HARD DRIVE AND CONTROLLER (ATA-100 OR BETTER). THE WORK STATION SHALL HAVE A 56 Kbps ANALOG MODEM AND AN ETHERNET PORT.

TxDOT may install state-owned applications on the microcomputer. If so, the Contractor will be required to sign an agreement authorizing the use of state-owned software on Contractor-owned equipment. TxDOT will be responsible for the installation and



maintenance of the state-owned applications. TxDOT will remove all state-owned applications before the microcomputer may be removed from the project.

The Contractor shall provide an Internet service provider (ISP) throughout the duration of the project. A broadband Internet connection is required, either by wireless, cable, or DSL. Dial-up access is acceptable only if a broadband connection is not available. If so, dial-up service must consistently provide no less than 48 Kbps connection speed and should have a local access number. Connection may be provided by dial-up lines, cable, DSL, or ISDN in the quantity needed to provide simultaneous connection of the Contractor and the inspector.

The microcomputer must be capable of accessing TxDOT's CITRIX Meta-frame server at Austin headquarters utilizing department furnished CITRIX client software. The Contractor must validate with TxDOT that a connection can be established by their chosen ISP. ISP's that utilize TCP/IP protocol should be capable of accessing the CITRIX server.

The Contractor will furnish TxDOT with the local workstation administrator password in order for TxDOT to perform any related support or maintenance on the workstation.

The printer shall automatically detect and process the latest Hewlett-Packard (HP) printer control language (PCL) and adobe postscript (PS) commands. Hewlett-Packard Graphic Language (HPGL) shall be provided. At least 4 Megabytes (MB) of Random Access Memory (RAM) shall be provided in the printer. The RAM may be reduced to 2 MB if the printer uses host based processing or graphic device interface (GDI) technology. Use of Host Based Processing or GDI technology shall not prevent processing print commands from DOS based applications. At least 30 fonts shall be resident in the printer. At least 25 fonts shall be scaleable. The printer shall be provided with at least one 100-sheet minimum paper tray. One paper tray shall accommodate letter size paper. Manual feed capability shall be provided. The printer shall include at least 1 USB port and at least 1 bi-directional parallel port. Capability for installing an Ethernet or token ring network adapter shall be provided on the printer.

The Contractor shall deliver the specified software and hardware to be used by TxDOT prior to the commencement of any work on the project. The Contractor shall purchase and provide to TxDOT updates to the software as required to remain compatible with current TxDOT software. In the case of needed repairs for the software or hardware, the Contractor shall provide a backup computer system meeting the same specifications within twenty-four (24) hours. Upon completion of the project, all hardware and software shall be returned to the Contractor.

All monthly equipment leases will be paid by the Contractor.

**Item 506 Temporary Sediment Control Fence/ Rock Filter Dams**

The SW3P for this project shall consist of using the following items as directed by the Engineer:

- Existing vegetative ground cover
- Sediment control fence
- Temporary/ permanent seeding
- Rock Filter Dams

Temporary sediment control fence and rock filter dams shall be used as shown on the plans and as directed by the Engineer.

Temporary sediment control fences will be checked and cleared of debris or sediment by the Contractor at least once a week, and after every ½" rain event. These tasks will be considered subsidiary to Item 506.

The Contractor shall designate a Contractor Responsible Person (CRP) for implementing, maintaining, and reviewing environmental requirements before and during the project. The CRP will be the contact person for the Contractor on these issues.

Any sediment control fences damaged by the Contractor's negligence, as deemed by the Engineer, shall be repaired or replaced at the Contractor's expense.

After temporary erosion control devices are no longer required, cleanup and reshaping of those areas will be required. This work will not be paid for directly but shall be considered subsidiary to the various bid items.

**ITEM 512**

Low profile concrete barrier shall be provided by TxDOT from the stockpile located at IH37 & US 77, and will be returned to that location after usage.

**ITEM 526**

If membrane curing is used for curing concrete structures, only type 1-D curing compound conforming to the requirements of Item 526 will be permitted.

**ITEM 530**

Driveway and intersection work conducted within the project limits shall conform to details shown on the plans or as directed by the Engineer.

All existing driveways not shown on the plans shall be replaced by the Contractor, as directed by the Engineer. These driveways shall be paid for at the price bid for driveways.

During construction, if conditions warrant, driveway locations, widths, or lengths may be varied as directed by the Engineer.

**ITEM 540**

Mixing of wood post types and shapes will not be allowed at the same location.

All timber posts shall be beveled.

The contractor will be required to adequately protect the traveling public during the placement of guard fence. No exposed bridge rail or guard fence ends will be allowed after normal working hours. All work must be complete at each location during the normal working day.

Painting of Metal Beam Guard fence Posts will not be required.

The Metal Beam Guard Fence Transition section shall utilize a Concrete Curb and the Concrete Curb shall be reinforced.

A concrete mow strip shall be placed along the metal beam guard fence as shown on standard sheet MS-03. Concrete shall be paid under Item 432.

**ITEM 560**

It is the responsibility of the Contractor to mark the location of the existing mailboxes and at the proper location out of the way of construction. Permanent mailbox locations may be varied as directed by the Engineer.

Temporary and permanent mailbox location shall be accessible to the United States Postal Service.

**ITEM 585**

Use Surface Test Type B with pay adjustment schedule 3 to evaluate ride quality of the travel lanes in accordance with Item 585 Ride Quality for Pavement Surfaces.”

The inertial profiler results shall be submitted to the Engineer the same day after each day’s paving operations are complete, unless otherwise directed by the Engineer.

Tests will be performed before backfilling pavement edges.

Areas not to be tested will be determined by the Engineer

**ITEM 644**

Refer to sign summary for type of reflective sheeting required.

The Engineer will determine the sign location and the Contractor will be responsible for marking these locations for future reference.

The Contractor will not begin the breakaway signposts until they have the signs and crew available to immediately follow up with the erection of signs.

Sign placement shall be in accordance with the sign crew field book or as directed by the Engineer. All dimensions shall be measured by the Contractor at the actual location in the field.

**ITEM 649**

For this project signs may be relocated once during construction. Drivable supports are not permitted for final placement of signs. New supports shall be provided for final placement of signs. The existing sign panels shall remain the property of the State and shall be delivered by the Contractor to the TxDOT office located in Refugio, Texas.

Any signs damaged due to Contractor neglect or mishandling will be replaced by the Contractor at his/her expense.

A traffic sign inventory will be required prior to the commencement of any work by the Contractor. The inventory shall show the sign type, size, condition, and location. The inventory shall be conducted by the Contractor with the Engineer present and jointly agreed upon.

All traffic signs to be salvaged for reuse on the project shall be stored by the Contractor as directed/approved by the Engineer.

**ITEM 662**

The Contractor shall install short-term pavement markings on the permanent roadway prior to opening to traffic. Pattern and spacing of short-term pavement markings shall be as shown on WZ (STPM)-03. Non-typical short-term pavement marking patterns shall be placed as approved by the Engineer. Removal of short-term pavement markings will be required immediately prior to placement of permanent markings.

Staples or nails shall not be used to secure markings.

For this project, standard pavement markings shall be installed by Contractor forces. It shall be the Contractor's responsibility to mark the location of the standard pavement markings including edgelines and transitions.

The Contractor may need to apply an asphalt adhesive to short term pavement markers to ensure they adhere to the roadway surface. This work will not be paid for directly but shall be considered subsidiary to the various bid items.

**ITEM 672**

The Contractor will be responsible for installing raised pavement markings on the finished roadway.

All raised pavement markers are required to meet departmental material specification D-9-4200, pavement markers (reflectorized). A list of prequalified suppliers is maintained by the Department's General Services Division. The Contractor shall provide documentation that they are placing high volume pavement markers on the roadway.

Bituminous adhesive shall be used to bond all pavement markers. The bituminous adhesive shall be placed at a temperature range of 380 to 390 degrees Fahrenheit. The pavement markers shall be placed on the bituminous adhesive approximately twenty (20) seconds after adhesive is placed on the pavement. The pavement marker shall rest solely on the adhesive and not the pavement surface. There shall be a layer of bituminous adhesive at least 1/8 inches thick between the pavement marker and the pavement surface. Raised pavement markers are to be placed after the Type I pavement markings have been applied

but no later than 30 calendar days after the surface treatment and/or as directed by the Engineer.

**ITEM 677**

All existing traffic buttons, and/or raised pavement markers, shall be removed by the Contractor as work progresses. Material removed will become the property of the Contractor and shall be disposed of off the project at a location approved by the Engineer.

The Contractor shall remove or obliterate all conflicting pavement markings as approved by the Engineer.

Elimination of existing pavement markings by use of special milling flails shall be limited to a depth of 50 percent of the pavement marking depth. The remaining pavement marking shall be removed through sandblasting or other methods acceptable to the Engineer.

**ITEM 5010**

Provide one (1) Transportable Cellular Telephone. This will not be measured directly, but will be subsidiary to pertinent items.

**ITEM 5261**

During the installation of the geogrid mats, the Contractor shall not allow any traffic to travel directly over the geogrid. A minimum flexible base thickness of six inches shall be placed over the geogrid prior to opening the mat to construction traffic.

For this project, Type I Geogrid shall be used.

When using a multilayer type Geogrid, longitudinally cut portions of a roll shall be held together by at least two rows of longitudinal stitching to insure proper layer alignment during installation and maintain integrity of cut portion as directed by the Engineer.

The Contractor shall provide adequate storage for the geogrid and shall plan the installation of the geogrid so as to limit exposure to ultraviolet degradation. The manufacturer's recommendations shall control unless otherwise directed by the Engineer.

**ITEM 6110**

TY I reflectorized pavement markings shall be used for final striping on this project unless shown otherwise. The placement restriction of September 30 to March 1 is hereby waived, subject to the temperature and moisture limitations specified under this item.

Pavement surface preparation for markings and markers shall conform to the requirements of Item 678, except for measurement and payment.

Permanent pavement markings are required within 14 days after the surface treatment has been applied.

It will be the responsibility of the Contractor to mark the locations of the standard pavement markings as directed by the Engineer. Pavement markings that are placed incorrectly such as no-passing zones, gore areas, turn lanes, etc. Shall be removed and remarked if deemed necessary by the Engineer at the Contractor's expense.

**ITEM 6422**

For this project, the Contractor will be required to supply portable changeable message signs (PCMS) (Type II– Lamp Matrix) as directed by the Engineer. A minimum of two PCMS will be required. However additional units may be necessary depending on the work in progress. These units will remain the property of the Contractor upon completion of the contract. This work will be paid for at the unit price bid per calendar day for each PCMS required for traffic control in accordance with this Item. The Engineer will provide the sign message text to the Contractor to be used at each sign. During the contract, at the discretion of the Engineer, the signs may be relocated or the message text changed. A Contractor's Responsible Person shall have full control of messages at all times.

PCMS will only be paid for when required or as directed by the Engineer.

**SPECIFICATION DATA**

## UNIT WEIGHT ESTIMATES

ITEM 247 FLEXBASE (TY A GR 1 CL 4)----- 136 LB/CF

**COMPACTION REQUIREMENTS**

ITEM 247	COURSE	DENSITY
FLEXBASE (TY A, GR 1, CL 4)	ALL	100 %

ITEM 132		
EMBANKMENT FINAL (TY D)	ALL	95 %

**SURFACE TREATMENT DATA-----ONE COURSE SURFACE TREATMENT**UNDERSEAL

ASPHALT, TYPE----- AC-5, AC-10 or CRS-2/HFRS-2

ASPHALT RATE (GAL/SY)-----0.32 0.42

ASPHALT RATE AVG (GAL/SY)-----0.37

AGGREGATE TYPE-----PB

AGGREGATE GRADE-----4 (MOD)

AGGREGATE RATE (CY/SY)-----1/115

ROLLING (LT PNEU) (HR/SY)-----1:2500

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**BASIS OF ESTIMATE**

ITEM	DESCRIPTION	QUANTITY	UNIT
-----	-----	-----	-----
ITEM 110	EXCAVATION (ROADWAY)	8,699.0	CY
ITEM 110	EXCAVATION (ROADWAY)	87.0	CY
ITEM 132	EMBANK (DENS CONT)(TY D)	3,555.0	CY
ITEM 166	FERTILIZER (16-8-8) @ 625 LB/ACRE (1 APPLICATION)	1.460	TON
ITEM 168	VEGETATIVE WATERING @ 13MG /ACRE/MO	120.1	MG
ITEM 247	FL BS (TY A GR 1)(FNAL POS)	6,159.0	CY
ITEM 310	PRIME COAT (MC-30, AE-P OR SS-1)	5,260.0	GAL



**Project Number: BR 2005 (81)**

**Sheet**

**County: Refugio**

**Control: 0447-05-055**

**Highway: FM 774**

	@0.15 GAL/SY/IN	(17,533)	(SY)
ITEM 316	AGGR (TY PB GR 4S SAC B) CY	222.0	
	@ 1 CY/115SY	(25,530)	(SY)
ITEM 316	ASPH(AC-5,AC-10,CRS-2,HFRS-2)	9,421.0	GAL
	@ 0.37 GAL/SY	(25,530)	(SY)
ITEM 341	D-GR HMA(QCQA) TY-C SAC-B	2,683.0	TON
	PG76-22@ 220 LB/SY		
ITEM 5261	GEOGRID REINFORCEMENT (TY 1)	19,178.0	SY